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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/929,935	08/15/2001	Nick King	APL1P214/P2664	1140

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EXAMINER

GRAHAM, ANDREW R

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 01/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/929,935	Applicant(s) KING ET AL.	
	Examiner Andrew Graham	Art Unit 2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 03 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-7,9,10 and 13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3-7,9,10 and 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Allowable Subject Matter

1. The indicated allowability of claims 3-7, 9-10, and 13 is withdrawn in view of the newly discovered references to Ballard (USPN 5617480), Wiser (USPUB 2003/0009247), and Mietling (USPN 6385322). Rejections based on the newly cited references follow.

Drawings

2. The drawings are objected to because they fail to meet requirements of CFR § 1.84.

- § 1.84 (1) *Character of lines, numbers, and letters:*

Every line, number, and letter must be durable, clean, black (except for color drawings), sufficiently dense and dark, and uniformly thick and well-defined. The weight of all lines and letters must be heavy enough to permit adequate reproduction.

Figures 5 and 7 do not meet this requirement, as particularly elements 504, 508, 512, and 708 in these figures are not sufficiently dense and dark or weighted for adequate reproduction.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

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Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C.

112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 7 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Specifically for Claim 7, the concept of "bypassing" does not appear to be described in the specification, though it was included in the claims of the original disclosure submitted 8/15/2001, and appears to be supported by Figure 8. The applicant is respectfully requested to point out where such bypassing is disclosed in the specification, or amend the specification to include such bypassing. Any such amendment may not include new matter and may only define such bypassing as it is supported in the original disclosure.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3-5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Griffiths (GB 2357409) in view of Ballard et al (USPN 5617480), hereafter "Ballard".

Griffiths discloses a multi-filter parametric equalizer system that incorporates a graphical user interface for the adjustment of the parameters of the filter.

Regarding Claim 3, Griffiths teaches:

A computer readable medium containing program instructions (system may be implemented in software or combination of hardware and software; page 20, lines 2-13) for controlling a parametric equalizer (6) (page 10, lines 14-27; parameters for configurable filters discussed page 15, line 5-page 17, line 10) comprising

computer readable code for displaying a composite equalization curve (22) (page 9, lines 8-10 and 17-25; page 13, lines 15-20), wherein the composite equalization curve is formed from at least

a first frequency filter with a first center frequency, a second frequency filter with a second center frequency, and a third frequency filter with a third center frequency (e.g., at 26, 28, 30; page 9, lines 17-22; page 10, lines 23-31; page 11, lines 1-2);

computer readable code for allowing a dragging movement of the first center frequency, the second center frequency and the third

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center frequency (page 9, lines 24-31; page 10, lines 1-13; page 14, lines 4-8; page 15, lines 5-8; Figures 6-13),

In the system of Griffiths, the IIR filters are configurable on the fly (page 11, line 14) and mouse (8) inputs are applied to characteristic processor (102), wherein the processor (102) affects changes in coefficient processor (104), which in turn applied newly calculated coefficients to controller (94) in the filter (6) (page 14, lines 4-27). Griffiths also teaches that typically, "reproduced audio signals are amplified and fed to loud speakers" (page 1, lines 14-15) and that the overall signal processing apparatus 1 may include further components such as amplifiers (page 9, lines 3-4).

However, Griffiths does not clearly specify:

- computer readable code for providing real time changes in equalization according to changes in the equalization curve caused by dragging movements and

- an output amplifier electrically connected to the parametric equalizer, wherein the equalization curve represents an equalization curve of the output amplifier.

Ballard teaches a parametric equalization system with a graphical user interface.

Specifically regarding Claim 3, Ballard teaches:

computer readable code (filtering performed by software running on DSP; col. 5, lines 13-14 and 45-50) for providing real time changes

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in equalization according to changes in the equalization curve caused by dragging movements (col. 6, lines 22-53; col. 7, lines 3-8) and

an output amplifier electrically^o connected to the parametric equalizer ("path", particularly between DSP, amplifier, set of speakers, col. 4, lines 18-22), wherein the equalization curve represents an equalization curve of the output amplifier (DSP in reproducer (14) applies alterations from mouse (20) of PC (16); col. 4, lines 11-15; col. 6, lines 33-41).

To one of ordinary skill in the art at the time the invention was made, it would have been obvious to implement an amplifier between the filtering component (6) and the loudspeakers (16,18) of Griffiths, as taught by Ballard, as well as provide the output of the filtering component (6) to such an amplifier and loudspeakers during an equalization process, as is also taught by Ballard. The motivation behind the use of the amplifier would have been the adaptation of a computer output signal amplitude to an amplitude appropriate for a set of loudspeaker; certain loudspeakers are well-known in the art to be able to process and output a signal with a larger amplitude than computer based output components. Electrical signal amplitude, when applied to output speakers, is well known in the art to parallel the amplitude of the reproduced audio signal. Griffiths states that reproduced signals are typically amplified and output by speakers, and that the disclosed system may include an amplifier; Ballard clearly teaches the relative signal path connection for such an amplifier. The almost immediate application of the adjusted equalization

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parameters to the signal output through such an amplifier and loudspeakers of the modified system would have enabled an audio designer or sound engineer to view a signal analysis and adjust the signal equalization in real time, and in accordance with actual reproduction conditions, as is taught by Ballard.

Regarding **Claim 4**, Ballard teaches that plural filenames, each of which correspond to stored equalizer parameter values, may be displayed for user selection (col. 8, lines 63-67). A user is then able to select a filename, at which time the coefficients are sent to the DSP and also plotted on the screen (col. 9, lines 1-4). The combination of multiple files stored on a disk and the user capability of typing in a filename to be read and plotted implies that any of these filenames may be typed in by a user to be read and plotted. Alternately stated, the file read operation is inferred as compatible with each of the filenames stored on the disc, as supported by the concept of prompting a user for a filename. Accordingly, the program code supporting the "READ icon" function reads on "code for displaying equalization curves of a plurality of presets".

In response to the above rejection, it is noted that Ballard does not, however, appear to be able to display a plurality of presets filenames to a user at the same time. The applicant's specification, along with elements (408,409) of Figure 4, suggest that these presets or stored sets of parameters may be viewed simultaneously with each other (see page 7, lines 7-13 and page 10, lines 1-5). Accordingly, an amendment to Claim 4 further detailing the nature of the

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"displaying" to include such simultaneous display of the equalization curves for a plurality of presets, may be sufficient to overcome the presently applied rejection of Claim 4. This analysis is only a suggestion, however, and is not in any manner to be interpreted as an indication of allowable subject matter,^o as once such an amendment is submitted, further search and/or consideration may be required.

Regarding **Claim 5**, Figure 12 of Griffiths illustrates adjustment handles for manipulating the half frequencies of a resonant filter. These half amplitude points define the normalized bandwidth of the filter response (page 5, lines 28-31; col. 6, lines 1-2). Griffiths also teaches that bandwidths of individual filters that make up the characteristic curve (22) may overlap (page 9, lines 15-22). Accordingly, the adjustability of the half gain frequencies of a utilized filter, in the context of multiple individual filters having overlapping or coinciding bandwidths is considered to equate to "the first frequency has a first bandwidth and the second frequency filter has a second bandwidth" and "code for allowing a dragging movement of the first bandwidth and the second bandwidth".

Regarding **Claim 9**, please refer above to the rejection of similar limitations of Claim 3 regarding the code for "displaying", "allowing a dragging movement of the first center frequency", and "providing". Griffiths also that the gain and/or center frequency of a resonance filter may be altered (page 15, lines 6-8). Figure 11 shows a resonance filter (page 8, lines 7-8). The figure shows that the frequency and gain may be changed from the same point; in the context

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of an x-y pole plot of gain versus frequency, these two adjustment directions are considered to be perpendicular. The "f" is disclosed as center frequency and "g" is inferred to represent gain, further detailed in association with Figure 13 (page 6, lines 13-16; page 15, lines 7-30; col. 17, lines 11-22, noting f_c and g_r). Accordingly, these teachings in regard to Figure 11 equate to "computer readable code for allowing a dragging movement of a first gain, wherein the dragging movement of the first gain is accomplished by dragging the first center frequency object in a second direction perpendicular to the first direction".

5. Claims 6-7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Griffiths in view of Ballard as applied above, and in further view of Wiser (USPGPUB 2003/0009247).

As detailed above, Griffiths discloses a multi-filter parametric equalizer system that incorporates a graphical user interface for the adjustment of the parameters of the filter. Ballard teaches a parametric equalization system with a graphical user interface, wherein the adjustments made to the parameters are applied to the reproduction audio system almost immediately.

Regarding Claim 6, Griffiths discloses that a plurality of filter types may be associated with the individual filters in the composite processing of a signal, as well as general parameters for said filter types (pages 14, line 30-page 17, line 10).

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However, Griffiths in view of Ballard does not disclose the manner in which such filters may be selected, and accordingly does not clearly teach:

- code for providing a pull down menu for selecting a parametric filter type

Wiser teaches an audio signal processing system that stores a plurality of profiles for audio encoding, wherein parameters associated with said profiles include equalization. Figure 14 illustrates a graphical user interface (GUI) window for signal equalization. Through the use of this window, four individual filters associated with filter boxes (1414A-D) may be selected, and the type, gain, center frequencies, and Q factors of these filters may be adjusted (page 10, para. 0099). The filter type (504A) field is specifically selected through the use of a pull down menu (1416) (page 10, para. 0099). The programming that supports the functionality behind this menu reads on "code for providing a pull down menu for selecting a parametric filter type".

To one of ordinary skill in the art at the time the invention was made, it would have been obvious to include a filter type menu, such as that shown by Wiser, as part of the GUI on the display of the system of Griffiths in view of Ballard. The motivation behind such a modification would have been that such a menu would have provided a visual manner for selecting the filter types associated with the individual configurable filters of the system of Griffiths in view of Ballard.

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Regarding **Claim 7**, the interface of Wiser includes a bypass selection box (1408) for bypassing the application of the equalization filters (page 10, para 0098). Such bypassing would include the bypassing of, for example, band 1 filter of Figures 5 and 14, and the program for executing the function behind such a check box reads on "code for bypassing a selected filter".

Regarding **Claim 10**, please refer above to the rejection of Claims 3 and 10, particularly noting the application of the menu (1416) of Wiser in regards to Claim 10. Disclosed filter types for Wiser include "high shelf", "low shelf", "high pass", (Figure 14 and page 10, para. 0099). Griffiths also discloses the filter types of "low pass", "notch", and "asymmetric shelf" (noting that this latter type at least meets one reasonable interpretation of the file associated under the general label "equalization curve") (page 16, lines 16-18). Griffiths also discloses that a single configurable filter may affect the overall equalization filtering (col. 19, lines 20-23).

6. **Claim 13** is rejected under 35 U.S.C. 103(a) as being unpatentable over Griffiths in view of Ballard as applied above, and in further view of Mietling (USPN 6385322).

As detailed above, Griffiths discloses a multi-filter parametric equalizer system that incorporates a graphical user interface for the adjustment of the parameters of the filter. Ballard teaches a parametric equalization system with a graphical user interface,

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wherein the adjustments made to the parameters are applied to the reproduction audio system almost immediately.

Regarding **Claim 13**, please refer above to the rejection of similar limitations of Claim 3 regarding the code for "displaying", "allowing a dragging movement of the first center frequency", and "providing".

Griffiths discloses the inclusion of speakers (16,18) in the system (Figure 1) and Ballard teaches the inclusion of speakers in the audio signal path (col. 4, lines 18-22). Griffiths teaches that different equalization parameters may be stored (page 13, lines 35-31) and Ballard discloses that filter settings may be both stored by filename and retrieved from storage and applied to the DSP unit (col. 8, lines 62-67; col. 9, lines 1-4). The parts of either of the programs in these references that enables this parameter storage reads on "computer readable code for saving equalization parameters as a preset".

Griffiths in view of Ballard does not specify:

- computer readable code for identifying a preset with a speaker type
- computer readable code for loading a preset according to speaker type

Mietling teaches a method of operating a system with a power amplifying and signal processing circuit with a variety of loudspeaker models. Identification of a speaker (4) is based on data stored in a

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memory (6) in the speaker (4) and the transmission of this data to a configuration circuit (3) in the amplifier (2) (col. 5, lines 3-22).

In particular regards to **Claim 13**, Mietling teaches:

computer readable code for identifying a preset with a speaker type (configuration circuit (3) receives data, such as model number, and based on data stored in circuit (3), draws conclusions about loudspeaker parameters; col. 6, lines 20-34)

computer readable code for loading a preset according to speaker type (data saved in configuration circuit (3) is, after conclusions are drawn about loudspeaker parameters, is available for the configuration; col. 6, lines 30-38; As noted above, Ballard also notes sending data to DSP unit)

The signal processing performed by the amplifier and audio processing circuit is particularly noted by Mietling as pertaining to equalization (col. 6, lines 54-62).

To one of ordinary skill in the art at the time the invention was made, it would have been obvious to incorporate the speaker model identification and corresponding operation parameter configuring components of Mietling as part of the equalization storage and loading functions of the system of Griffiths in view of Ballard. The motivation behind such a modification would have been that such loudspeaker identification would have provided a manner for automatically recalling stored operation parameters, parameters previously designated as preferred or optimal, regardless of the different combinations of the audio processing circuits and the output

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speakers. Such component-based configuration would have prevented loudspeaker overloading and possible loudspeaker damage, as is disclosed by Mietling, as well as enabled configuration to be based on changing parameters of a particular loudspeaker.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Eid (USPN 6804565) discloses a system for sound processing and equalization that includes the capability of adding various filters to output channels.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Graham whose telephone number is 703-308-6729. The examiner can normally be reached on Monday-Friday, 8:30 AM to 5:00 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huyen Le can be reached on (703)305-4844. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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January 7, 2005


HUYEN LE
PRIMARY EXAMINER